

1. A metal halide lamp of different wattage having superior dimming characteristics, said lamp comprising:
a discharge vessel formed of a material resistant to sodium at high temperature;
a fill including mercury and metal halides in said vessel including at least one member selected from the group consisting of MgI_2 or $MgBr_2$; and
discharge electrodes positioned at opposite ends within the discharge vessel; and
an envelope surrounding the discharge vessel.

10

3. A lamp as claimed in claim 1 further comprising Hg and Ar or Xe, halides of Na and at least one of the elements of Dy, Ho, Tm and wherein the MgI_2 or $MgBr_2$, or both are in a molar quantity between about 5 and 50% of the total molar quantity of the total halides.

15

4. A lamp as claimed in claim 1 wherein the halides are Na, Dy, Ho and Tm and wherein the total molar quantity of halides of Na, Dy, Ho and Tm is between about 50 and 95%, and wherein such halides are in the form of iodides or bromides.

20

5. A lamp as claimed in claim 2 in which the molar quantity of Dy halide is between about 0 to 20%.

25

6. A metal halide lamp of different wattage having superior dimming characteristics, said lamp comprising:
a discharge vessel formed of a material resistant to sodium at high temperature;
a fill in said vessel including at least one member selected from the group consisting of MgI_2 and/or $MgBr_2$ and an ionizable filling comprising Hg and Ar or Xe, halides of Na and at least one of the halides of Dy, Ho, Tm and wherein the MgI_2 is in a molar quantity between about 5 and 50% of the total molar quantity of the total halides; and

30

35

discharge electrodes positioned at opposite ends within
the discharge vessel; and
an envelope surrounding the discharge vessel.

5 7. A metal halide lamp of different wattage having
superior dimming characteristics, said lamp comprising:
a discharge vessel formed of polycrystalline alumina;
an ionizable filling consisting essentially of Hg and Ar
or Xe, halides of Na and at least one of the elements of Dy,
10 Tm and Ho plus at least one member selected from the group
consisting of MgI_2 and $MgBr_2$ in a molar quantity between about
5 and 50% of the total molar quantity of the total halides in
said vessel including MgI_2 and/or $MgBr_2$; and
discharge electrodes positioned at opposite ends within
15 the discharge vessel; and
an envelope surrounding the discharge vessel.

20 8. The lamp according to claim 1 wherein said envelope
contains a fill gas at a pressure between about 350 and 600
mmHg.

25 9. A dimmable metal halide lamp comprising:
a discharge vessel;
discharge electrodes positioned at opposite ends within
the discharge vessel, and
an ionizable fill including at least one metal halide
including MgI_2 or $MgBr_2$.

30 10. A metal halide lamp comprising:
a discharge vessel;
discharge electrodes positioned at opposite ends within
the discharge vessel; and
a fill consisting essentially of mercury, MgI_2 or $MgBr_2$,
wherein said fill is substantially thallium-free.



11. A metal halide lamp comprising:

a discharge vessel;

discharge electrodes positioned at opposite ends within
the discharge vessel;

5 a fill including mercury and at least one metal halide,
said metal halide including MgI_2 or $MgBr_2$; and
an envelope surrounding the discharge vessel.

12. A metal halide lamp comprising:

10 a discharge vessel;

discharge electrodes positioned at opposite ends within
the discharge vessel;

an ionizable fill substantially free of thallium and
including at least one metal halide in said vessel comprising
15 MgI_2 or $MgBr_2$;

an envelope surrounding the discharge vessel.

13. A metal halide lamp comprising:

20 a discharge vessel formed of a material resistant to
sodium at high temperature;

discharge electrodes positioned at opposite ends within
the discharge vessel;

25 a fill including mercury and at least one metal halide in
said vessel, said metal halide comprising MgI_2 or $MgBr_2$,
wherein said fill is substantially free of thallium;
and an envelope surrounding the discharge vessel.